

Notice of Allowability

Application No.

09/786,276

Applicant(s)

PARK ET AL.

Examiner

Art Unit

Zachary C. Tucker

1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 21 November 2003.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Response to Amendment

As requested in the correspondence from applicants dated 21 November 2003, which is in reply to the Office action mailed 30 May 2003, claims 1, 4, 8 and 9 have been amended and new claims 10-12 have been added.

The new abstract has been entered.

The amendments to the specification at pages 8 and 10 have been entered.

Status of Claim Rejections - 35 USC § 112

In the previous Office action, dated 30 May 2003, claims 1-9 were rejected under 35 U.S.C. 112, second paragraph for on several grounds. For the sake of brevity, these grounds of rejection will not be summarized here. The rejections are explained on pages 2-5 of the Office action mailed 30 May 2003.

The deficiencies which prompted the rejections under this statute have been corrected by the amendments to claims 1, 4, 8 and 9.

The term "acyl donor" is no longer seen as indefinite. The product made by the instantly claimed process comprises the acyl group $-C(O)-R_3$. Thus, compound which supplies the acyl group, $-C(O)-R_3$, where R_3 is defined in claim 1, is an acyl donor. This is the full scope of the term "acyl donor" in the context of the claimed invention.

Claim 9 has now been examined on the merits, as applicants' argument that "acyl donor" is not indefinite and should not be limited to only *p*-chlorophenyl acetate and isopropenyl acetate, is persuasive.

The rejection of claims 1-9 under 35 U.S.C. 112, second paragraph, are hereby withdrawn.

Status of Claim Rejections - 35 USC § 103

In the previous Office action, dated 30 May 2003, claims 1-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Persson et al, *J. Am. Chem. Soc.* vol. 121, pages 1645-1650 (13 February 1999) in view of Koh et al, *Tetrahedron Letters*, vol. 39, pages 5545-5548 (1998) and further in view of Mahmoudian et al, *Biotechnol. Appl. Biochem.*, vol. 29, pages 229-233 (1999).

The rejection is hereby withdrawn in view of applicants' argument to the effect that Koh et al does not show how to combine the ruthenium catalysts disclosed therein with a lipase.

According to Koh et al, some base is necessary for the activity of the ruthenium catalyst (page 5546), and potassium hydroxide is best.

Although the Koh et al article does not specifically state that triethylamine is completely inactive (on page 5546, Koh et al states, "Potassium carbonate and the organic bases such as 1,8-diazabicyclo[5.4.0]undec-7-ene and triethylamine are much less effective than potassium hydroxide."), the table on page 5546 shows that with triethylamine as the base, the chiral alcohol remains 99%ee after 24 hours in the presence of the ruthenium complex, which serves to show that triethylamine is in effect totally inactive. Therefore, one of ordinary skill in the art would *avoid* triethylamine.

The last page of Koh et al states that attempts to combine the ruthenium complexes disclosed therein with lipase-catalyzed acylation were not fruitful because of predominant chemical acylation of alkoxides. Therefore, one of ordinary skill in the art would avoid strong bases like alkoxides.

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The examiner agrees with applicants that Mahmoudian et al relates to a different type of acylation reaction than what is claimed. However, the examiner disagrees with applicants' characterization of Mahmoudian et al as nonanalogous art because Mahmoudian et al provides some specific teaching to one of ordinary skill relating to how a lipase is employed to catalyze an acylation reaction. A reference need not disclose the same subject matter as is claimed for said reference to be relied upon for its teachings in a rejection under 35 U.S.C. 103(a).

Though Mahmoudian et al teaches triethylamine is a good reagent to use with lipase, Koh et al teaches away from the use of triethylamine, and also teaches away from strong inorganic bases in combination with lipases (page 5548, last paragraph).

Persson et al does not teach that a base is necessary with the ruthenium complexes disclosed in that reference (page 1650, "General Procedure...").

Allowable Subject Matter

Claims 1-12 are allowed.

The following is an examiner's statement of reasons for allowance:

All previously stated rejections have been withdrawn in view of applicants' amendment and argument.

The claimed invention overcomes the problem acknowledged in Koh et al, that strong inorganic bases which are required with the ruthenium complexes are incompatible a lipase-catalyzed acylation, and a weaker organic base, triethylamine does not work with the ruthenium complexes within the scope of instant claim 1.

Though the prior art shows ruthenium complexes within the scope of instant claim 1 to be effective catalysts for racemization of chiral alcohols, the prior art does not provide enough guidance to render the combination of these complexes with a lipase, in a reaction system as specified in instant claim 1, obvious.

An updated search did not afford any additional applicable prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

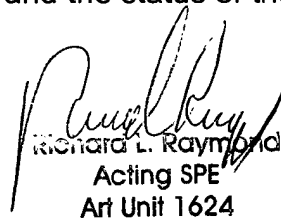
All Post-Allowance Correspondence concerning this application must be mailed to:

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or you can fax them to the Office of Patent Publications at 703-308-5083, in order to expedite the handling of such correspondence as amendments under 37 CFR 1.312; information disclosure statements, and formal drawings. Sending Post-Allowance papers to Technology Center 1600 will only cause delays in matching papers with the case.

For information concerning status of correspondence sent after receipt of the Notice of Allowance, please contact the Correspondence Branch at (703) 305-8027. The Notice of Allowance also has an insert containing contact information on other items, including Issue Fees, receipt of formal drawings and the status of the application.

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